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ANNEX IV

THE GROUND WAR IN SOUTH VIETNAM

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ANNEX - IV

THE GROUND WAR IN SOUTH VIETNAM

I. The Build-Up of Forces

The course of the ground war in South Vietnam is marked by the extent to which, in the conventional military sense, it has become increasingly a confrontation between third country forces. This situation reflects the already heavy commitment of indigenous manpower resources to the war effort. The heavy casualties sustained by local Communist forces (VC) are putting an increasing strain on their ability to mobilize additional military manpower. The GVN has committed substantial manpower resources to pacification programs and internal security and police programs. Over half of the GVN military forces are committed to these counter-insurgency programs. The GVN potential for expansion of its military forces, which would be limited under the best of circumstances, is restrained further by the political unrest in the GVN and the high desertion rate in the ARVN.

Since mid-1965, NVA troops in South Vietnam have increased by nearly 37,000. They now total 38,000 of about 38 percent of the total VC/NVA main force. By the end of 1966, an estimated 60,000 NVA troops will account for nearly half of the VC/NVA main force. By mid-1967 an estimated 75,000 NVA troops will account for 55 percent of main force strength. US/Third Nation* forces at the end of 1964 totaled only 25,000 troops or 9 percent of Allied regular troop strength. In mid-1966 there were 300,000 US/Third Nation troops or 49 percent of total strength. Projected deployments indicate that US/Third Nation forces will account for 470,000 troops or 59 percent of the regular Allied Army strength in South Vietnam by mid-1967.

Regular Free World forces now outnumber the total estimated Communist force by 5 to 1, and hold a 6 to 1 margin

*Here and throughout the remainder of the text, South Korean, Australian and New Zealand Forces are referred to as "Third Nation" Forces.

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over the VC/NVA main force units. Overwhelming air and artillery support, coupled with considerable troop mobility and naval participation also add significantly to the preponderance of Allied military strength.

There is a sharp distinction between Communist and Allied forces in the number of support troops needed to back up tactical combat troops. Only about one-fifth of the total Allied Army and Marine Corps troops are committed to engaging and destroying the enemy in offensive operations. Thus of a force in June 1966 totaling slightly over 218,000 Army and Marine Corps ground forces only 44,200 represented troops in maneuver battalions. Over 157,000 troops were involved in indirect combat, logistics, construction engineering, security and other support tasks and some 16,400 troops are in artillery battalions. The Communist forces, on the other hand, have to commit only 18,000 troops or a little over 15 percent of their regular forces to combat support, compared to over 80 percent for the Allied forces.

When the relative build up of opposing forces is looked at in this manner the troop strength ratios change dramatically. The troop strength ratio of Allied maneuver battalions becomes nearly 1:1 rather than 6:1. In the II and IV Corps area the ratio is in the favor of the Communists. The projections of estimated Communist main force strength and Allied troop strength in maneuver battalions in mid-1967 indicate a troop strength ratio which gives the over-all strength advantage to the Communists. The advantage is offset, of course, by the air, artillery and naval support of the Allied forces and their highly developed mobility. Nevertheless, the Communist build up, particularly of NVA forces, shows a determination to commit whatever forces are necessary to match the Allied build up and to extend the war as long as possible. Even if the Communists admit that they cannot win a conventional military victory in South Vietnam they may still calculate that a long extended war with increasing US casualties may eventually break down US will and determination to persevere.

II. Casualties

The toll in human lives is, however, presenting an increasingly high cost to the Communist forces. The heavy casualties sustained by VC forces has already stabilized the extent to which they can commit troops and has forced

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them to rely more heavily on NVA replacements. Total Communist losses--killed in action, captured, seriously wounded and deserters--ranged from an estimated 80,000 - 90,000 during 1965. During 1966 we estimate that these losses may range from 105,000 - 120,000 and from 65,000 - 75,000 for the first six months of 1967 if the current rates of combat are maintained and projected troop strengths are realized. We estimate that some 25,000 - 30,000 of the losses during 1966 will be North Vietnamese; an additional 25,000 - 30,000 North Vietnamese will be lost during the first half of 1967. The bulk of these losses will result from battle deaths and serious wounds. Local Communists will sustain estimated losses of from 80,000 - 90,000 during 1966 and an additional 40,000 - 45,000 during the first half of 1967. About two-thirds of local Communist losses will result from battle deaths and serious wounds. The remainder will be accounted for by captives and deserters.

In terms of the number killed in action on the battlefield, the Allied forces will continue to maintain an advantage. We estimate that about 48,000 Communists will be killed during 1966 and an additional 30,000 during the first six months of 1967 compared to 16,000 Free World soldiers estimated to be killed during 1966 (6,000 US and Third Nation, 10,000 ARVN) and an additional 9,000 that will probably be killed during the first six months of 1967.

Reports on battle fatalities among Communist forces indicate they have increased from slightly under 2,000 a month during the first six months of 1965 to about 3,900 each month during the second half of the year and 4,000 a month during January-May 1966.

On the basis of very limited data we estimate that the number of Communist troops seriously wounded and hence effectively lost has increased from about 1,600 - 2,500 a month in 1965 to from 2,000 - 3,200 a month in 1966. Our estimates indicate that the numbers of Communist personnel captured during 1965 and 1966 do not vary much, ranging from 6,300 in 1965 to an estimated 7,000 in 1966.

The Allied forces have achieved better than a 3 to 1 kill ratio over the enemy. Our data on VC/NVA forces killed in action show a sharp change in the relative shares accounted for by GVN forces and US/Third Nation forces. In the last

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six months of 1965, US/Third Nation forces accounted for 23 percent of total Communists killed in action. In the first five months of 1966, however, US/Third Nation forces accounted for 56 percent of total Communists killed in action.

The rising casualty rates among Communist forces have had no detectable influence on North Vietnam's desire to continue the war in the South. The enemy continues to buildup his forces in the South, and the Communist forces are performing in battle as well today as they were in 1964 and 1965. The manpower drain on North Vietnam, in numbers alone, has not yet reached a burdensome level. Although the VC units have borne most of the casualties to date and are squeezed for manpower, Hanoi seems willing to increase its commitment. The drain on manpower could, however, become more critical as the casualty rates in the South and the competing demands for more manpower in the North increase. An increase in casualty rates in the South substantially higher than those already estimated through mid-1967 would require an Allied commitment of maneuver battalions substantially greater than that indicated in current deployment programs.

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APPENDIX A

THE GROUND WAR IN SOUTH VIETNAM

I. General Troop Strength

A. U.S. and Third Nation

1. Forces - General

The U.S. military commitment in South Vietnam, along with that of South Korea, Australia, and New Zealand, has grown from some 25,000 troops at the end of 1964 to approximately 300,000 troops at the end of June 1966. Projected troop strengths indicate that approximately 470,000 U.S./Third Nation forces will be stationed in South Vietnam by mid-1967. (See Table IV-1)

In both an absolute and relative sense U.S./Third Nation troop strength in South Vietnam has grown more rapidly since 1964, than has the corresponding buildup in the South Vietnamese regular forces (See Table IV-2). U.S./Third Nation forces represented 9 percent of total Allied regular troop strength in 1964, 41 percent in 1965, and 49 percent in mid-1966. They will account for 59 percent of the planned regular Allied forces in South Vietnam by June 1967.

2. Deployment

U.S./Third Nation ground forces in South Vietnam are predominantly deployed in the I, II, and III Corps areas, with South Vietnamese troops, as of August 1966, maintaining complete military responsibility in the Capital Military Region (Saigon) and IV Corps areas. United States Marines are stationed at Da Nang, Chu Lai and Phu Bai in the I Corps area. Field Force I, with headquarters at Nha Trang (II Corps area), contains the 1st Cavalry Division, elements of the 25th Infantry and 101 Airborne Division. ROK forces, and the 5th Special Group. Field Force II, with headquarters at Cu Chi (III Corps area), contains the 1st Infantry Division, elements of the 25th Division, 173 Airborne Brigade, and Australian and New Zealand Units (See Figure IV-1).

B. South Vietnam

1. Forces - General

At the end of June 1966, the Republic of South Vietnam had some 700,000 people under arms (See Table IV-3).

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Table IV-1

South Vietnam: Actual and Projected Growth
of Total US/Third Nation Forces
December 1964 - June 1967

	Dec 1964	Jul 1965	Dec 1965	Jun 1966	Dec 1966	Jun 1967
	Thousands					
United States						
Army	15.0	40.0	120.0	160.0	240.0	275.0
Marines	1.0	25.0	40.0	50.0	70.0	70.0
Air Force	7.0	10.0	20.0	40.0	50.0	50.0
Navy and Coast Guard	1.0	5.0	10.0	20.0	25.0	30.0
Subtotal	<u>24.0</u>	<u>80.0</u>	<u>190.0</u>	<u>270.0</u>	<u>385.0</u>	<u>425.0</u>
Third Nation	1.0	5.0	20.0	30.0	45.0	45.0
Total	<u>25.0</u>	<u>85.0</u>	<u>210.0</u>	<u>300.0</u>	<u>430.0</u>	<u>470.0</u>

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Table IV-2

South Vietnam: Comparative Actual and Projected Regular
Allied Troop Strength
December 1964 - June 1967

	(In thousands)*				
	1964**	1965	June 1966	December 1966	June 1967
GVN***	250.0	300.0	310.0	320.0	325
U.S. and Third Nation	25.0	210.0	300	430.0	470
Total	275.0	510.0	610.0	750.0	795
U.S. and Third Nation as Percent of Total	9	41	49	57	59

* Rounded to the nearest 5 thousand.

** End of year figures except for June 1966 and June 1967.

*** Excludes some 383 thousand quasi-military/security personnel.

Table IV-3

Total South Vietnamese Armed Strength
December 1964 - June 1967

	(In thousands)*			
	1964**	1965	1966	1967
<u>South Vietnamese Forces</u>				
Regular Military	250.0	300.0	310.0	325.0
Regional	95.0	130.0	140.0	140.0
CIDG	20.0	30.0	30.0	30.0
Popular	170.0	135.0	140.0	140.0
Armed Combat Youth	45.0	40.0	25.0	25.0
National Police	30.0	50.0	55.0	55.0
Total	610.0	685.0	700.0	715.0

* Rounded to nearest 5 thousand.

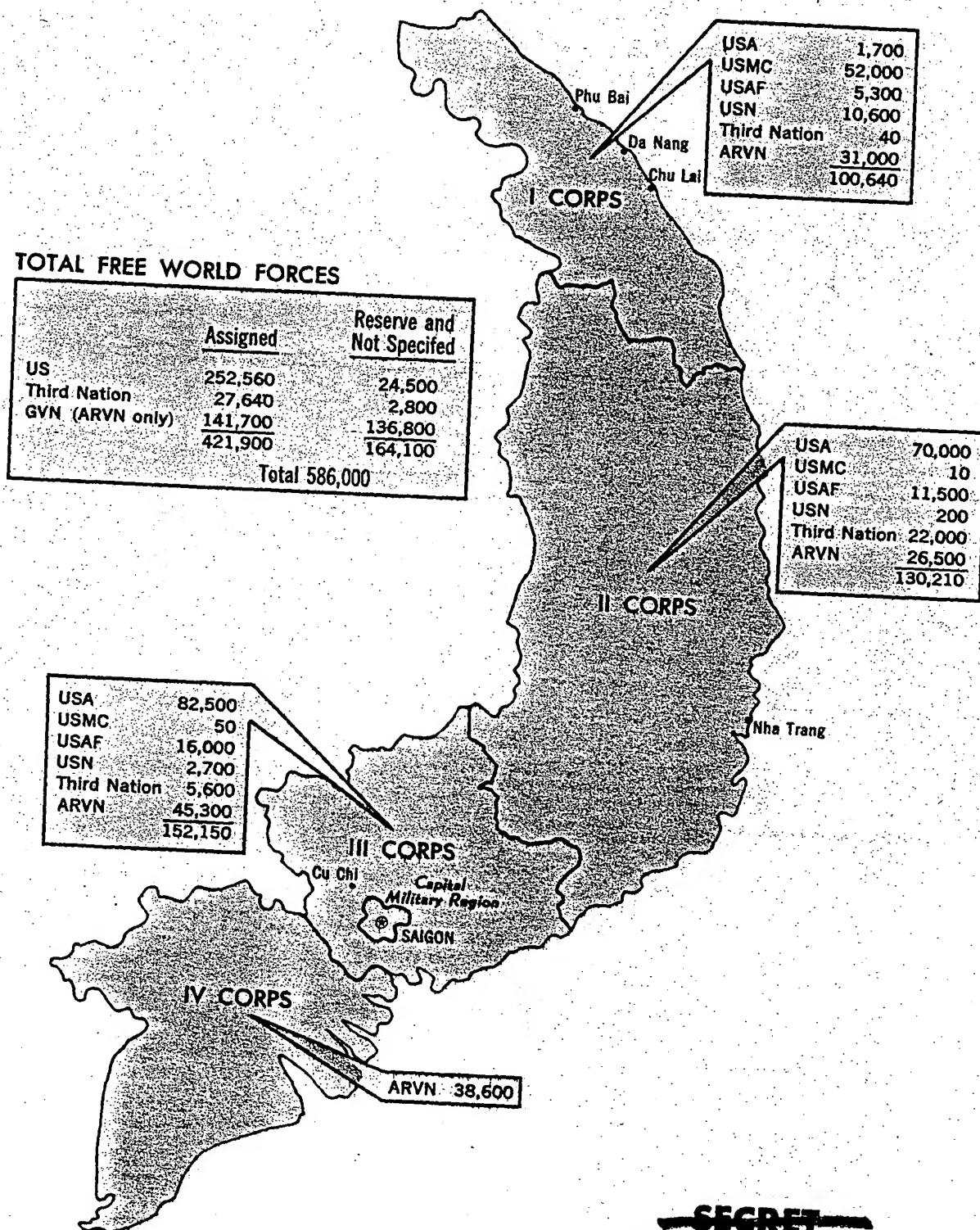
** End of year strength with exception of June 1966 and June 1967.

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Figure IV-1

SOUTH VIETNAM: MAJOR ALLIED DEPLOYMENTS OF REGULAR TROOPS, BY CORPS, MID-1966



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This figure, however, does not accurately reflect the regular South Vietnamese military strength. Only about 45 percent of the total South Vietnamese armed strength is committed to conventional military operations.

The South Vietnamese have responsibility for the bulk of the pacification program and measures to eliminate or neutralize the Viet Cong infrastructure. These programs require the commitment of some 350,000 men in quasi-military, self-defense and national police units. The South Vietnamese regular military force consists of 275,000 army troops, 15,000 air force and 20,000 navy/marine forces. Since 1964, the regular South Vietnamese military force has increased by some 60,000 men or by about 25 percent. Projected deployments indicate that the regular forces are to be increased by some 10,000-15,000 men, bringing total strength up to 320,000-325,000 men by June 1967.

2. Major Deployments

The mid-1966 South Vietnamese Army Order of Battle is presented in Table IV-4 below:

Table IV-4

Major South Vietnamese Ground Force Deployments by Corps Area, Mid-1966

<u>Combat Units</u>	<u>Assigned Strength</u>
I Corps	31,000
II Corps	26,500
III Corps	43,000
IV Corps	38,500
Capital Military Region	2,000
General Reserve	8,500
Support Units and Miscellaneous	<u>128,000</u>
Total	277,500*

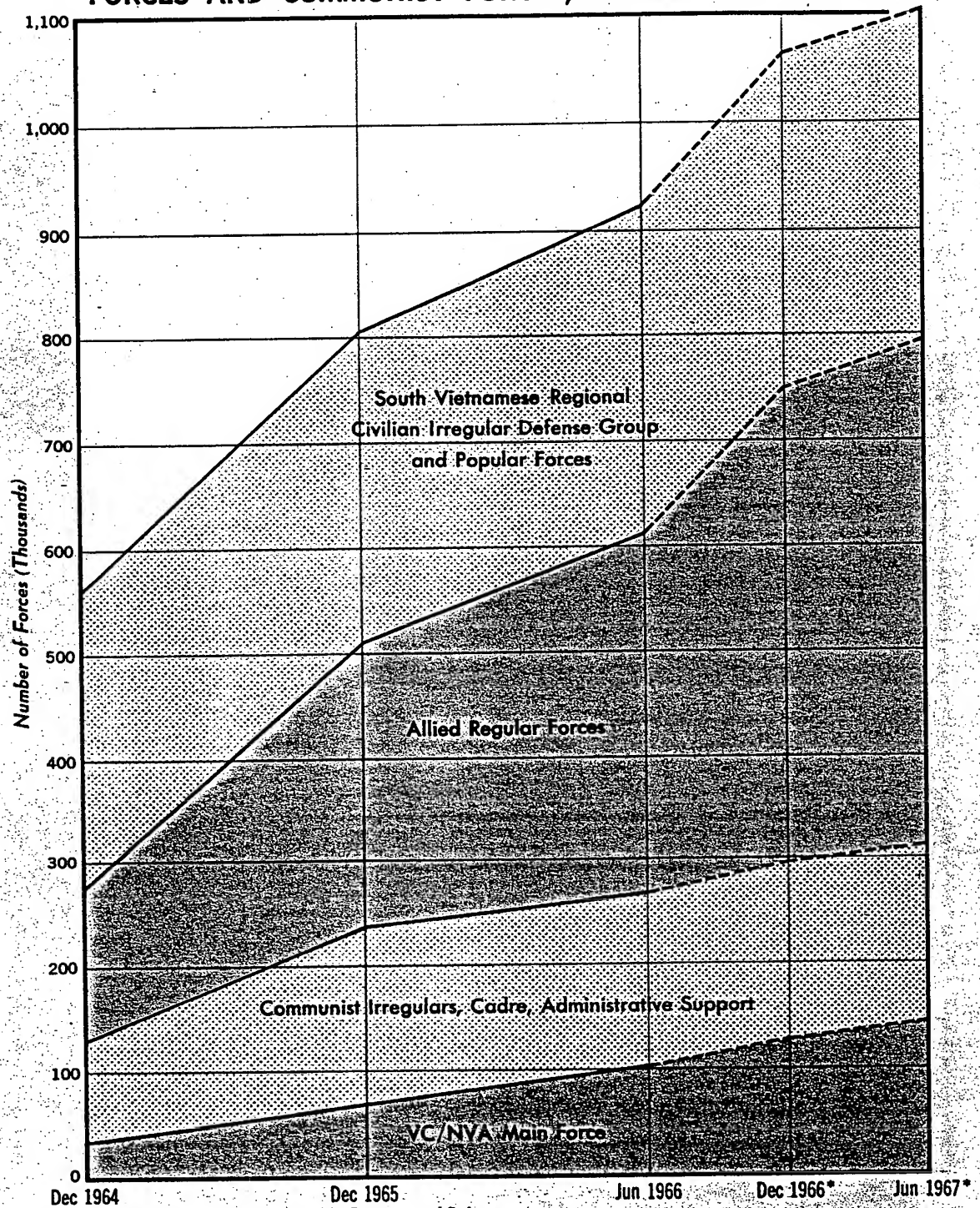
*Includes five GVN Marine Battalions with a total strength of 4,000 men. Approximately 21 percent of the combat strength is allocated to I Corps, 18 percent to II Corps, 29 percent to III Corps, 25 percent to IV Corps and 7 percent to reserves and the Capital Military Region.

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Figure IV-2

SOUTH VIETNAM
ACTUAL AND PROJECTED GROWTH IN US/GVN/THIRD NATION
FORCES AND COMMUNIST FORCES, December 1964 - June 1967



*Projections for Allied Forces provided by Department of Defense.

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Figure IV-4

SOUTH VIETNAM APPROXIMATE AND PROJECTED GROWTH IN COMMUNIST FORCES December 1964 - June 1967

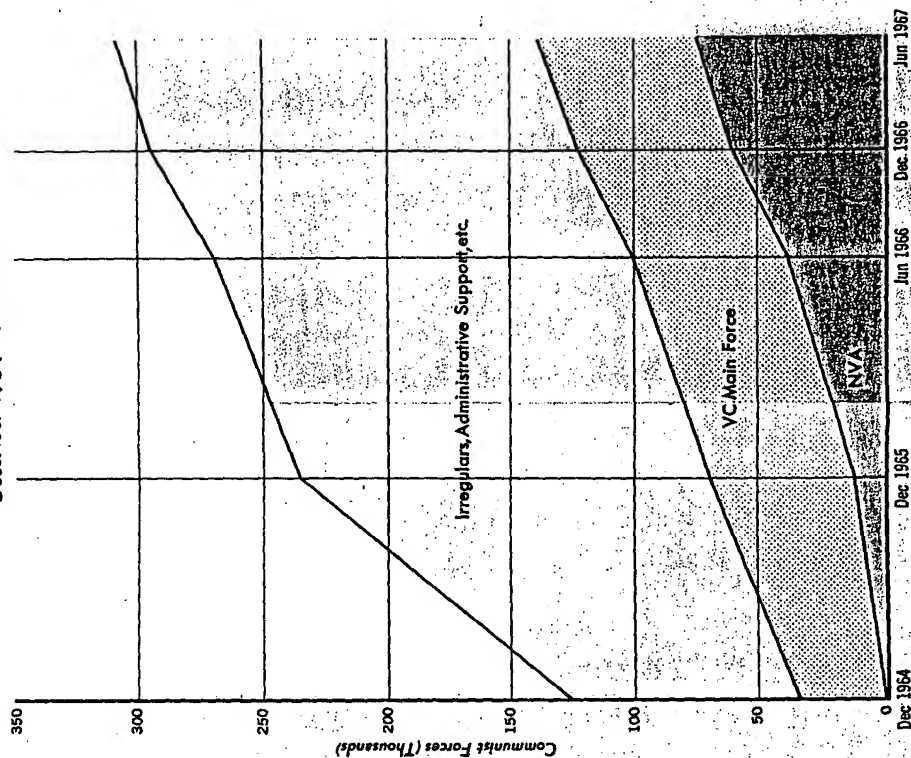
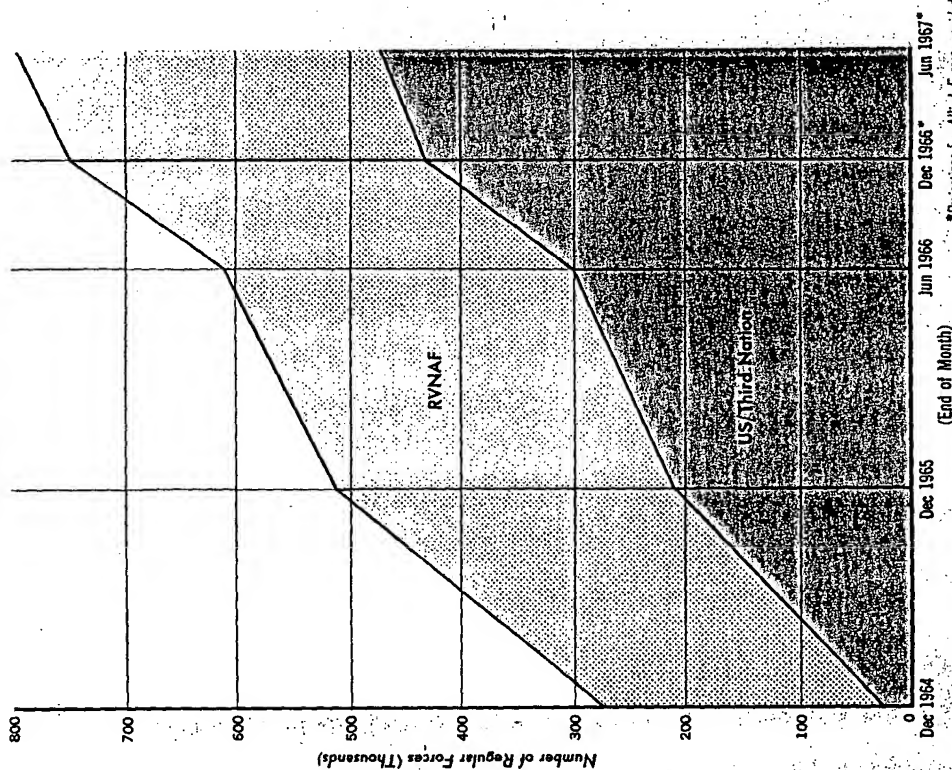


Figure IV-3

SOUTH VIETNAM APPROXIMATE COMPOSITION OF ACTUAL AND PROJECTED GROWTH IN REGULAR ALLIED FORCES (US, TN, AND RVNAF) December 1964 - June 1967



*Projections for Allied Forces provided by Department of Defense.

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war in South Vietnam is rapidly developing into a confrontation between the United States and North Vietnam with South Vietnamese forces on both sides playing relatively reduced roles. In spite of rapidly growing Allied troop strength and resulting heavy enemy losses, North Vietnam continues to send regular troops south in increasing numbers. The Vietnamese Communists apparently recognize the impossibility of a classic military solution, but may hope to attain their objectives by unconventional means and apparently intend to extend the war as long as possible in the hope of wearing down US will to see the war through.

An early and successful conclusion to the military struggle rests, therefore, with the ability of Allied forces to hunt down and destroy the enemy on his own ground. It is in this context that the numerical superiority in the ratios of Allied to Communist strength became less impressive. More meaningful relationships and trends in analyzing the present and future course of the ground war depend on the actual number of Allied troops theoretically capable of engaging and destroying the enemy in offensive operations.

B. Critical Troop Ratios

1. Assumptions

Total Allied troop strength in South Vietnam presently stands at some 610,000 men. Current NVA/VC main force strength is estimated to be about 100,000 troops.* At first glance it would appear that Allied regular forces presently enjoy a 6:1 numerical superiority over the NVA/VC main force. In a practical sense, however, this is not the case. Western troops and their South Korean and Vietnamese Allies require considerable numbers of support troops to maintain offensive combat units in the field. Since the scale of combat in South Vietnam at the present time is largely dependent on the level of Allied initiated offensive operations, it seems logical to exclude Allied support

*Irregular forces, political cadres and combat support forces are excluded from Communist troop strength in this analysis because of their limited role in conventional warfare.

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troops in deriving meaningful ratios of actual Communist/Allied battlefield strength. The combat strength of the NVA/VC main force is taken at current estimated full strength--about 100,000 men. Allied combat strength is defined to include the number of troops assigned to maneuver battalions--those troops who initiate offensive ground actions and conceptually come into direct contact with the enemy. The critical troop ratio is defined as NVA/VC main force/Allied maneuver battalion strength.

2. Offensive Combat Strength

a. U. S./Third Nation

For purposes of this analysis only ground troops are considered--nearly 60,000 men in the Air Force and Navy are excluded from the analysis. (See Table IV-7). Approximately 20 percent of the total U. S. Army and Marine Corps strength in South Vietnam is committed to maneuver battalions. (See Figure IV-5). An additional 7 percent is assigned to artillery battalions that primarily provide combat support to the maneuver battalions.* The remaining 73 percent of the Army and Marine Corps personnel perform supply, construction, engineering, security, and related support tasks. The percent of maneuver battalion strength to total Third Nation troop strength is considerably higher because these troops are largely supported by US service units. The deployment by Corps area and service of US/Third Nation maneuver battalions is presented in Table IV-8. As of June 1966, 31 percent of US/Third Nation maneuver battalion strength was located in I Corps, 41 percent in II Corps, and 28 percent in III Corps. Projected deployments for June 1967 indicate that some 78,600 US/Third Nation troops in maneuver battalions will be distributed in the following manner: I Corps 23 percent, II Corps 49 percent, and III Corps 28 Percent.

b. South Vietnam

In the analysis of the critical troop ratios only the South Vietnamese Army is given consideration--some

*Artillery battalions are excluded from the critical ratio due to the manner in which they are employed in combat.

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Table IV-7
 South Vietnam: Actual and Projected Deployment of US/Third Nation Forces, by Function
 July 1965 - June 1967
 (In Thousands)

	1965												1966				
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Combat and Direct Combat Support																	
Maneuver Battalions																	
USMC	9.0	10.0	12.0	12.0	12.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	18.0	18.0	18.0	18.0	18.0
USA	6.4	10.4	14.4	16.0	17.6	19.2	24.0	24.0	24.0	26.4	26.4	27.2	27.2	27.2	27.2	27.2	27.2
TN	.8	.8	.8	7.1	7.1	7.1	7.1	7.1	7.1	9.2	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Artillery*																	
USMC	2.6	2.6	3.6	3.6	3.6	3.6	4.0	4.6	4.6	4.8	5.4	5.4	5.4	5.4	5.4	5.4	5.4
USA	1.7	1.7	3.7	3.7	6.7	8.7	9.7	9.7	10.2	10.7	10.7	11.0	11.0	11.0	11.0	11.0	11.0
Subtotal	20.5	25.5	34.5	42.4	47.0	50.6	57.8	59.4	61.1	67.1	69.5	70.6	70.6	70.6	70.6	70.6	70.6
Construction, Engineering, Security, Support, etc**																	
USMC	13.9	21.6	20.8	21.2	22.2	22.6	21.6	20.8	28.9	29.0	29.8	31.2	45.4	46.4	46.4	46.4	46.4
USA	31.6	36.0	58.1	73.6	80.2	88.9	89.0	95.3	103.2	111.6	117.1	138.8	190.3	219.1	219.1	219.1	219.1
USAF	11.6	12.7	13.6	15.2	18.3	20.6	25.3	28.7	32.3	33.0	33.9	38.1	50.0	50.0	50.0	50.0	50.0
USN***	4.6	5.3	6.0	8.5	8.8	8.7	9.8	10.5	12.7	13.8	14.8	17.8	24.0	24.0	24.0	24.0	24.0
Subtotal	61.7	75.6	98.5	117.9	129.5	140.8	145.7	155.3	177.1	187.4	195.6	225.9	309.7	339.5	339.5	339.5	339.5
Total	82.2	101.1	133.0	160.3	176.5	191.4	203.5	214.7	238.2	254.5	265.1	296.5	405.2	445.2	445.2	445.2	445.2

* Excludes antiaircraft and missile units, unknown TN artillery included in combat and direct combat support.

** Includes USAF and USN, although recognized that these forces perform indirect combat support roles.

*** Includes Coast Guard.

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Table IV-8

South Vietnam: Actual and Projected Deployment
of US/Third Nation Maneuver Battalions by Service and Corps Area
February 1965 - June 1967

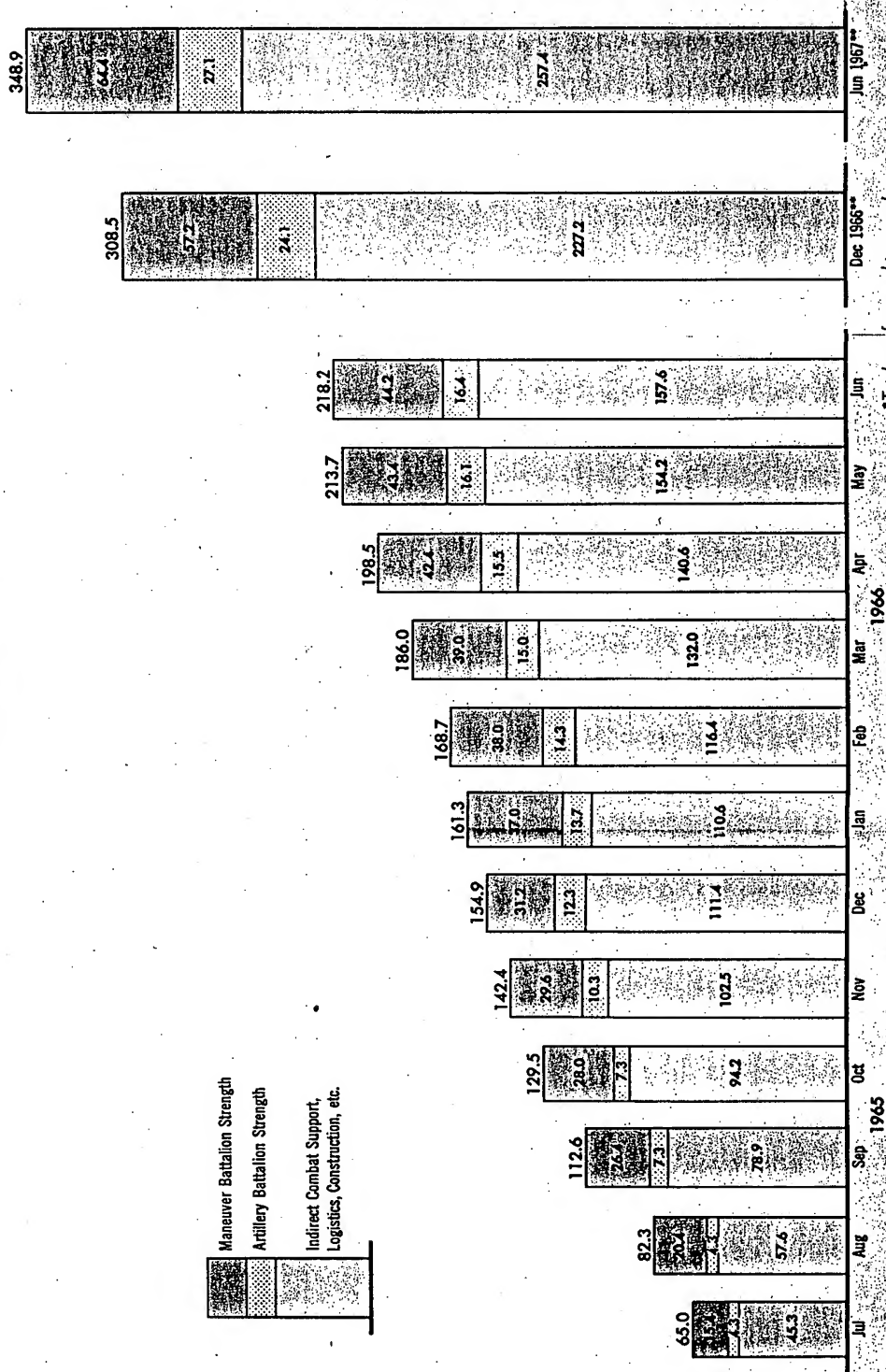
(In Thousands)

	1965												1966					
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
I Corps:																		
USMC*	.3	2.0	4.0	7.0	7.0	9.0	10.0	12.0	12.0	12.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	18.0
II Corps																		
USA					2.4	6.4	10.4	10.4	10.4	11.2	11.2	13.6	13.6	13.6	13.6	13.6	25.6	25.6
TN									6.3	6.3	6.3	6.3	6.3	6.3	8.4	8.4	17.6	12.6
III Corps																		
USA					1.6	1.6	4.0	4.0	5.6	6.4	8.0	10.4	10.4	10.4	12.8	12.8	13.6	20.8
TN					.8	.8	.8	.8	.8	.8	.8	.8	.8	.8	.8	1.6	1.6	1.6
Total	.3	2.0	4.0	8.6	9.4	16.2	21.2	27.2	35.1	36.7	38.3	44.1	45.1	46.1	51.6	53.4	71.4	78.6

* Excludes tank battalions.

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COMPOSITION OF US MANEUVER BATTALION AND ARTILLERY BATTALION STRENGTH* TO TOTAL US ARMY AND USMC TROOP STRENGTH July 1965 - June 1967 (Thousands)



* Totals are for ground troops only.
** Projections provided by the Department of Defense.

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35,000 men in the Air Force, Navy and Marines are excluded. Approximately 16 percent of the total South Vietnamese Army strength is committed to maneuver battalions. (See Figure IV-6). As of June 1966, 21 percent of ARVN maneuver battalion strength was located in I Corps, 21 percent in II Corps, 30 percent in III Corps and Capital Military Region, and 28 percent in IV Corps. Projected deployments for June 1967 reflect no change in present troop size of deployment. (See Table IV-9).

c. NVA/VC Main Force

For purposes of this analysis regular enemy combat strength is considered to include all NVA/VC main force troops. Although it is recognized that not all of the troops in this classification are performing combat tasks, there are several justifications for making such an assumption. These regular enemy troops must be hunted down and destroyed or eliminated regardless of their operational functions. It is also recognized that the NVA/VC main force requirements in terms of endogenous support troops are but a small fraction of similar requirements needed by Western troops.

The estimated strength of NVA/VC main force Corps areas as of June 1966 indicates that approximately 17 percent of NVA/VC main force strength is located in I Corps area, 38 percent in II Corps, 27 percent in III Corps, and 18 percent in IV Corps. (See Figure IV-7). North Vietnamese Army troops are predominantly deployed in the two Northern Corps while VC main force units are largely located in the two Southern Corps areas. Currently there are no known North Vietnamese Army units in the IV Corps.

3. Analysis of Critical Troop Ratios

a. Aggregate Field Strength Ratios

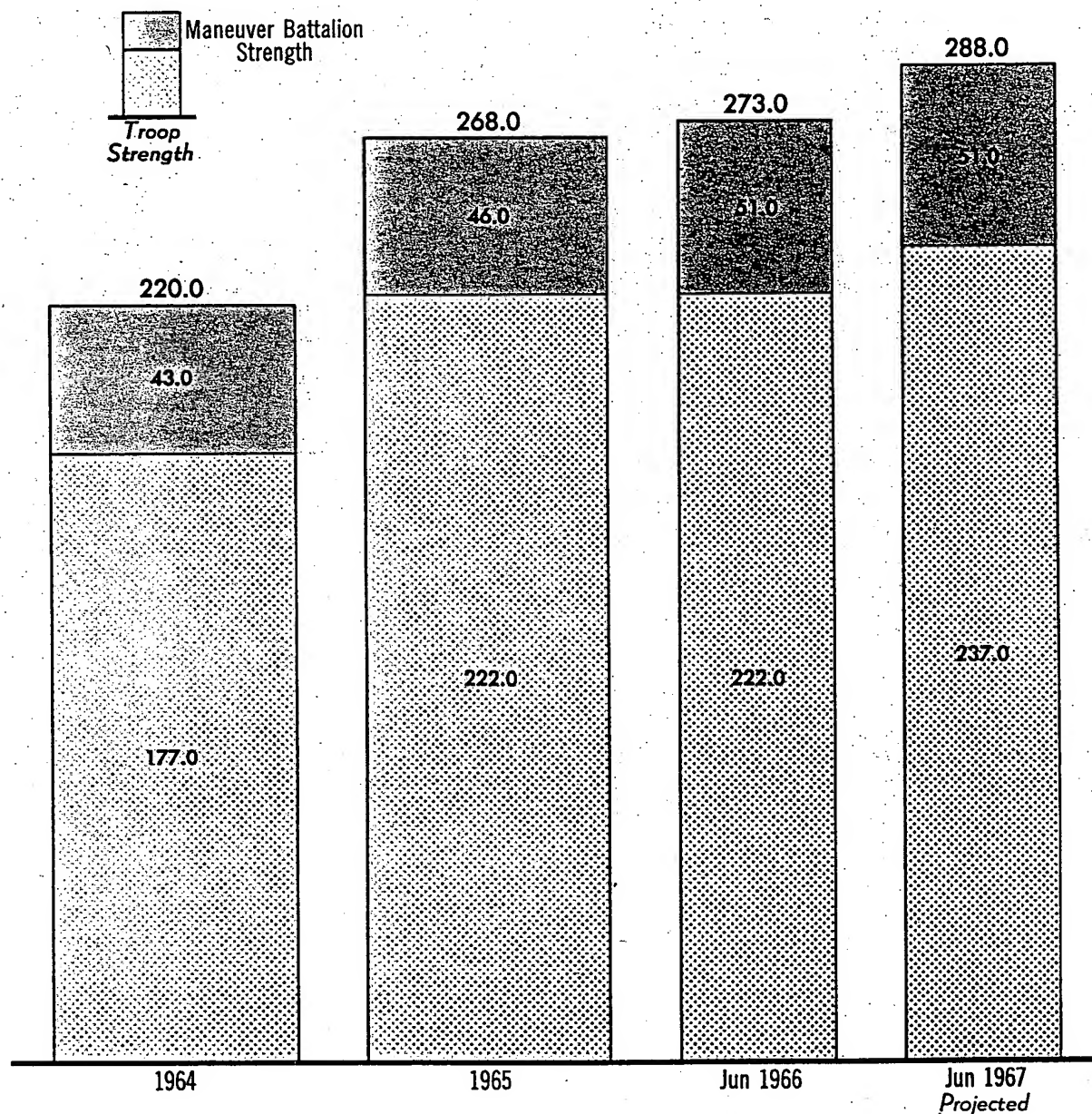
It should first be pointed out that in the field, Allied forces as defined, do not have a distinct numerical manpower advantage over the regular enemy forces. In fact, Communist forces in certain Corps areas possess superior numbers. Strong objections could be raised to this observation. The high degree of Allied troop mobility, and essentially unlimited air and ground support

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Figure IV-6

APPROXIMATE COMPOSITION OF ARVN MANEUVER
BATTALION STRENGTH TO TOTAL ARVN TROOP STRENGTH
1964 - June 1967
(Thousands)



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Table IV-9

South Vietnam: Actual and Projected Deployment
of ARVN Maneuver Battalions by Corps Area
February 1965 - June 1967

(In Thousands)

	1965												1966					Jun 1967
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
I Corps																		
RVN	9.0	9.4	9.4	9.4	9.4	9.4	9.8	9.8	9.8	9.8	9.8	9.8	10.1	10.1	10.1	10.1	10.8	10.8
II Corps																		
RVN	8.6	8.6	8.6	8.6	8.6	8.6	9.4	9.4	9.8	9.8	9.8	9.8	10.5	10.5	10.5	10.1	10.5	10.5
III Corps																		
RVN	13.5	13.5	13.5	13.1	13.1	13.1	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.9	13.9	14.2	15.0	15.0
IV Corps																		
RVN	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	13.5	13.9	13.9	13.9	14.2	14.2
CMR	0	0	0	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
Total	43.5	43.9	43.9	43.9	43.9	43.9	45.5	45.5	45.9	45.9	45.9	45.9	48.0	48.0	48.0	48.7	50.9	50.9

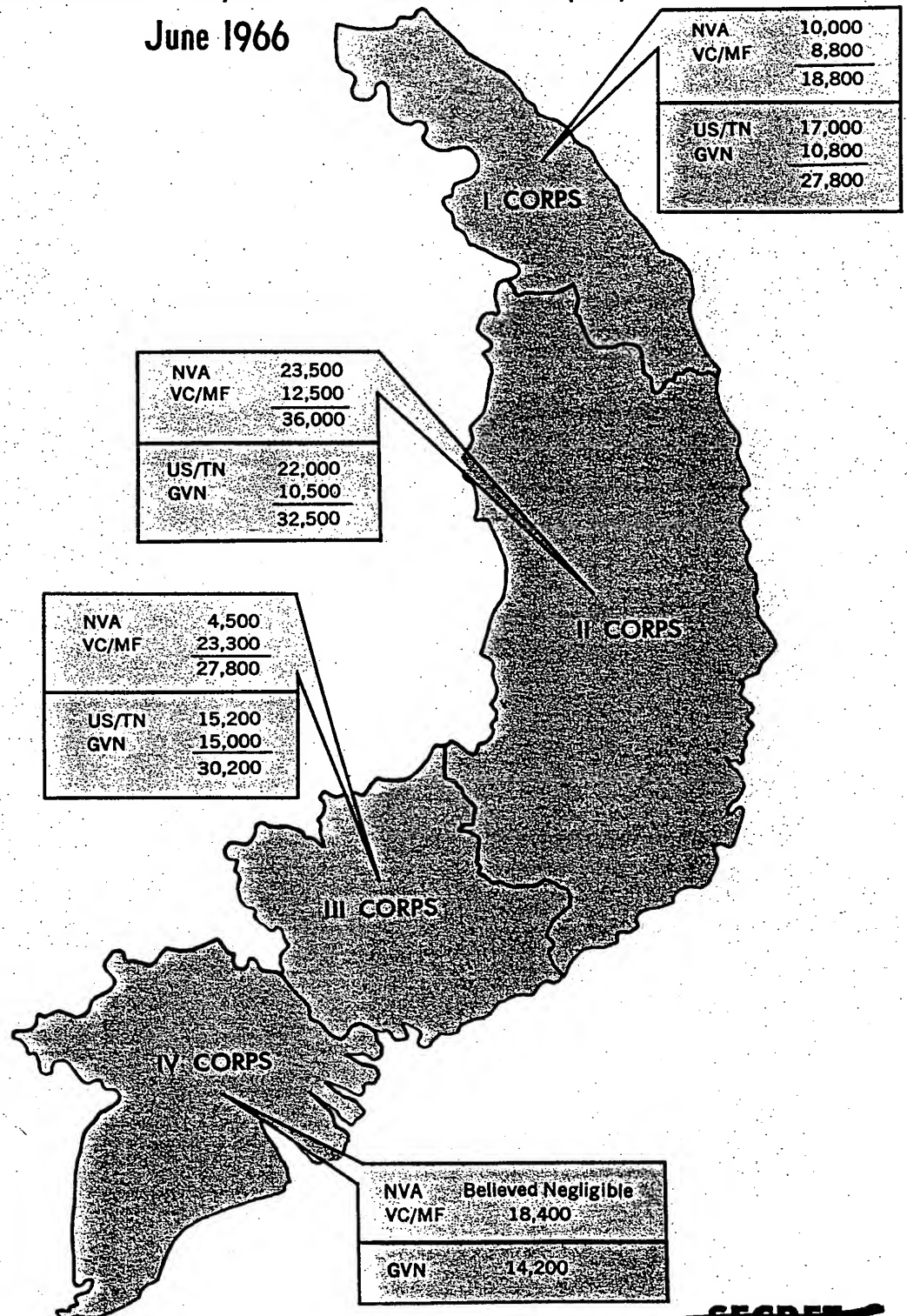
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Figure IV-7

SOUTH VIETNAM: TROOP DISPOSITION BY CORPS OF ALLIED MANEUVER BATTALIONS AND ESTIMATED VC/NVA MAIN FORCES (MF)

June 1966



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probably help to make the ratio of friendly to enemy field forces less critical than it appears in Table IV-10. The ratio of friendly to enemy field forces has increased slightly in favor of the Communists during the July 1965-June 1966 period. A friendly to enemy field force ratio of 1:.8 was observed in mid-1965 and a ratio of 1:.9 observed in mid-1966. Projections of enemy and Allied field strengths indicate that the Communists may achieve a 1 to 1 ratio with opposing field forces in December 1966 and a 1.1 to 1 ratio by mid-1967.

b. Qualitative Aspects of Increases in Field Force Strength

The contribution of South Vietnam to both the Allied and local Communist field troop strength has stabilized in the past year. In July 1965, GVN troops accounted for 73 percent of Allied field strength. In June 1966 GVN troops made up 48 percent of Allied field strength. In July 1965, South Vietnamese Communists accounted for 98 percent of the enemy field forces. By June 1966, local Communists accounted for 62 percent of the enemy field forces. United States/Third Nation field forces have increased by some 38,000 during the July 1965 - June 1966 period. Regular South Vietnamese Army field forces have increased by about 7,000 in the same period. Regular North Vietnamese Army force increased by some 37,000 troops in the July 1965 - June 1966 period. The endogenous Communist contribution to VC main force increased strength by an estimated 11,000 during the same period.

c. Corps Area Field Strengths

The critical ratio of opposing field forces in South Vietnam by Corps area as of mid-1966 indicates that Allied strength varies considerably from one area to another (See Table IV-11). The Allied field forces enjoy an estimated 1:.68 and 1:.92 manpower superiority in I and III Corps areas respectively. In II and IV Corps areas the Communists enjoy an estimate 1:1.1 and 1:1.3 manpower superiority in the field. Consequently, it is observed that while Allied forces enjoy an aggregate manpower superiority of 1:.96 in mid-1966, such an advantage is not held equally at each Corps level.

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South Vietnam: Ratio of Allied Maneuver Battalion Strength
to Estimated NVA/VC Main Force Troop Strength
July 1965 - June 1967

(In Thousands)

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Table IV-11

South Vietnam: Ratio of Allied Maneuver Battalion
Strength to Estimated NVA/VC Main Force Troop
Strength by Corps Area, Mid-1966

	I Corps	II Corps	III Corps	IV Corps
NVA	10,000	23,500	4,500	--
VCMF	8,500	12,500	23,300	18,400
Total	18,800	36,000	27,800	18,400
US/TN	17,000	22,000	15,200	--
GVN	10,800	10,500	15,000	14,200
Total	27,800	32,500	30,200	14,200
Ratio Friendly to Enemy $\frac{\text{NVA/VC}}{(\text{US/TN} + \text{GVN})}$	1:.68	1:1.1	1:.92	1:1.29

C. Projected Critical Troop Ratios

We estimate that by the end of 1966 Communist field strength in South Vietnam will be about 125,000 and 140,000 by mid-1967 (See Table IV-12). North Vietnamese Army units will account for 54 percent of the total. Projected Allied deployments for the end of 1966 and mid-1967 show that approximately 122,300 and 129,500 troops respectively, will be allocated to maneuver battalions. About 58 percent of the projected Allied field strength will be accounted for by US/Third Nation forces. The projected increases in both forces

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will come largely from US/Third Nation troops and the North Vietnamese Army.

Table IV-12

South Vietnam: Projected Critical Troop Ratios:
Allied Maneuver Battalion Strength to
Estimated NVA and VC Main Force Strengths

(In thousands)			
	June 1966	December 1966	June 1967
NVA	38.0	60.0	75.0
VCME	<u>63.0</u>	<u>65.0</u>	<u>65.0</u>
TOTAL	101.0	125.0	140.0
US/TN	54.2	71.4	78.6
GVN (ARVN)	<u>50.9</u>	<u>50.9</u>	<u>50.9</u>
TOTAL	105.1	122.3	129.5
Ratio Friendly to Enemy (NVA/VC US/TN + GVN)	1:.96	1:1.02	1:1.08

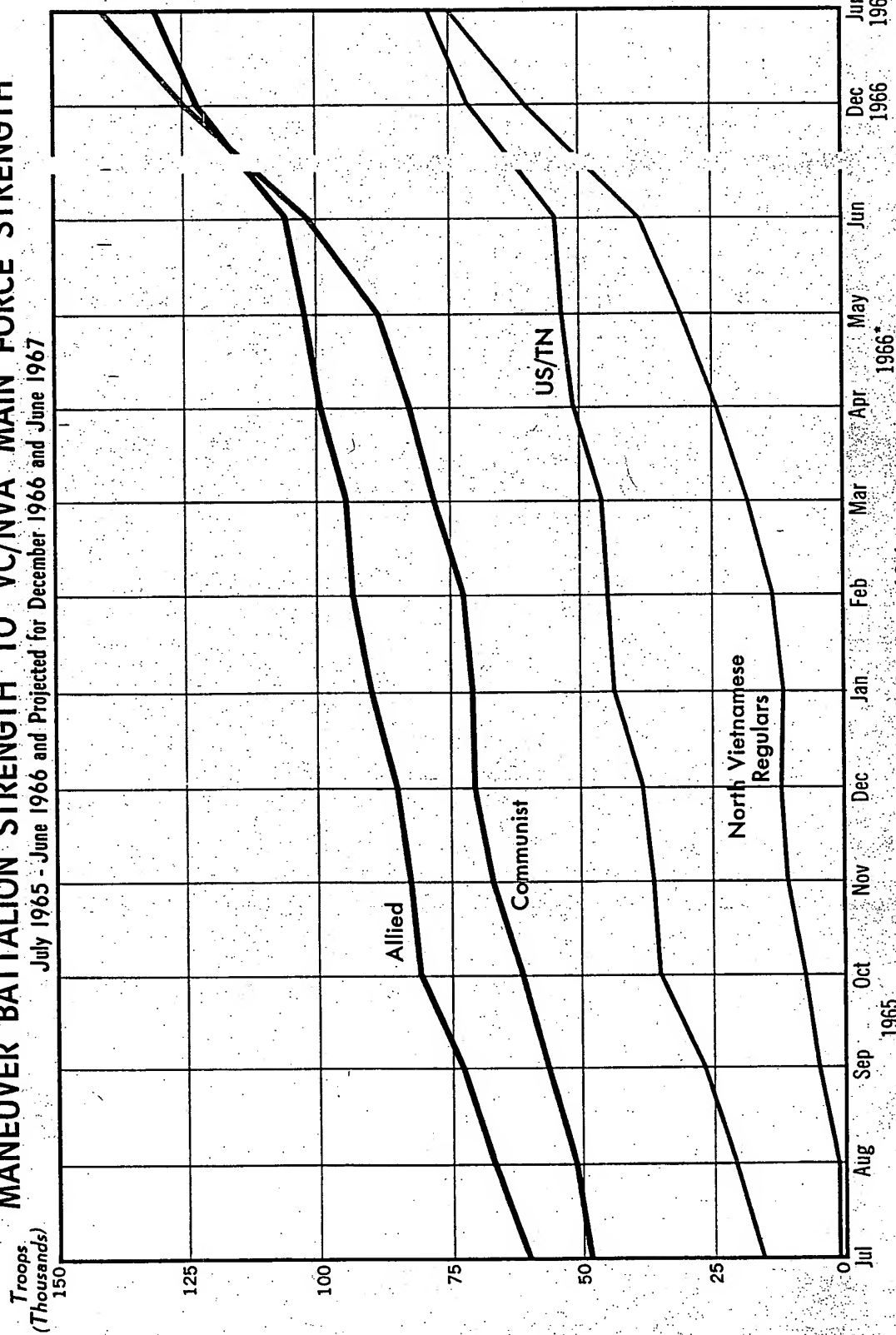
The ratio of NVA forces to US/Third Nation forces has grown from approximately 1 to .1 in July 1965, to 1: to .7 in mid-1966. Projections indicate that this ratio may increase to 1 to .8 in December 1966 and nearly 1 to 1 by mid-1967. The North Vietnamese apparently plan to match the buildup in US/Third Nation maneuver battalions. (See Figure IV-8). Thus, during the next 12 months Allied forces in South Vietnam will in a relative sense, face a larger enemy force than they have in the past.

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Figure IV-8

COMPARATIVE, ACTUAL, AND PROJECTED ALLIED AND US/THIRD NATION MANEUVER BATTALION STRENGTH TO VC/NVA MAIN FORCE STRENGTH



*Allied estimates from the Department of Defense.

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III. Operations

A. Assumptions and Methodology

The statistics used to evaluate the intensity and course of the ground war in South Vietnam take on added meaning in a war without fronts. Several of the factors employed to assess the war in South Vietnam are subject to considerable margins of error, and as such require discussion. The number of Communist troops reported killed in action is both the most important and least reliable statistical measure used to assess the progress of the military aspects of the struggle. The figure is subject to error because of duplications, omissions, possibly inflated body counts, and the inability to identify non-military casualties. On the other hand, it is well known that Communist forces exert considerable effort to remove both their dead and wounded from the battlefields of South Vietnam. At present there appears to be no rational method for adjusting enemy body count figures. Consequently, the statistics on enemy dead are taken as received, subject to non-quantifiable reservations on their accuracy.

The allocation of the reported enemy dead to the respective inflicting forces also presents a problem. Combined US/Third Nation and GVN operations are conducted in such a manner that an accurate accounting of enemy casualties by an inflicting force is difficult to achieve. A similar problem exists in trying to determine whether artillery, air support or ground forces inflicted the casualties. Statistical problems also exist in allocating casualties to large and small scale operations.

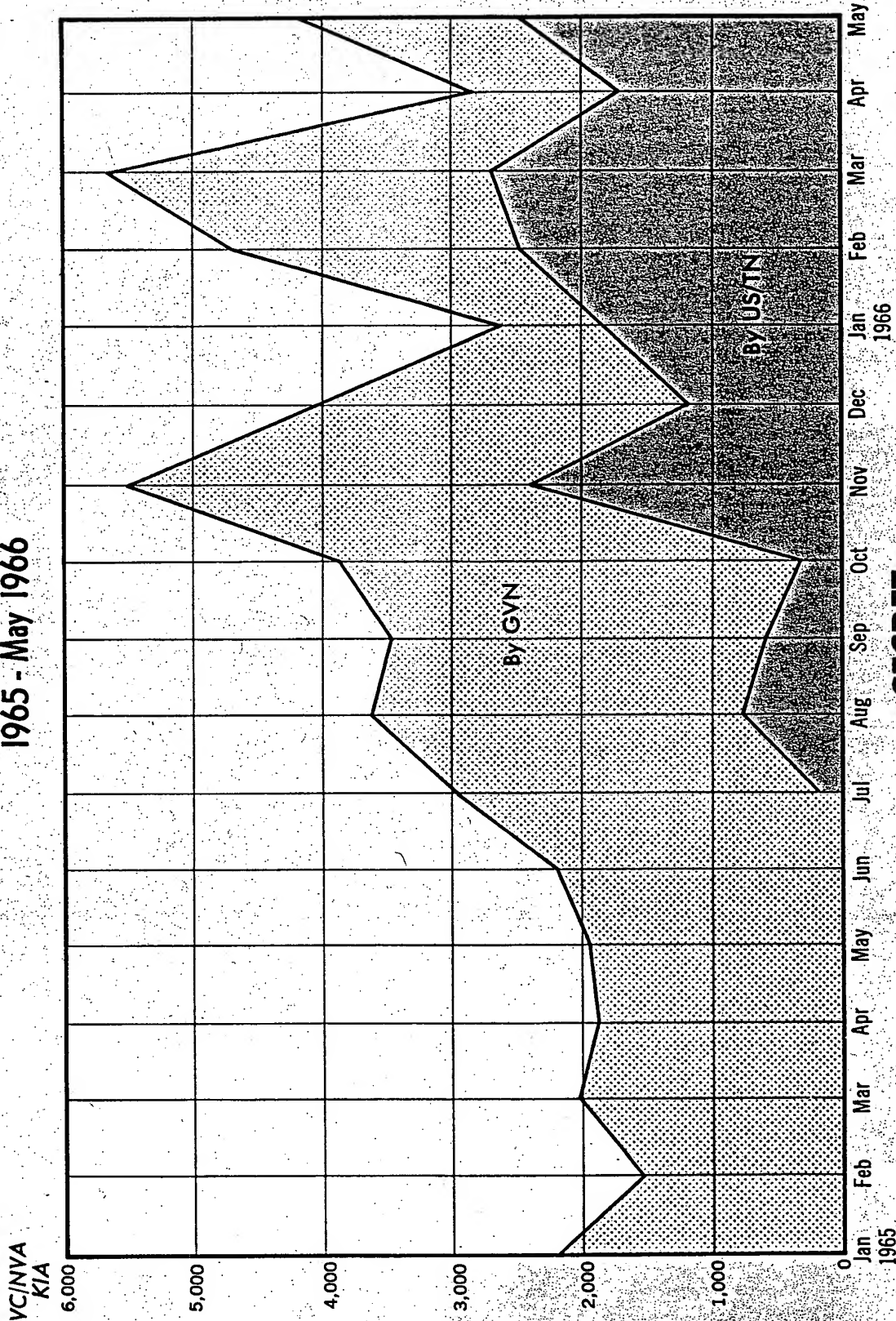
To allocate the number of reported enemy killed in each engagement to the respective inflicting force, the number of Allied soldiers killed in each combined operation were weighted by their aggregate kill ratios. The number of Allied and enemy killed in action were also rounded in an effort to make the data consistent. It was observed that the majority of US/Third Nation inflicted and sustained casualties were results of maneuver battalion sized operations or greater. A similar assumption with far less certainty was made with respect to GVN forces. South Vietnamese casualties, both inflicted and sustained, were allocated to their

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APPROXIMATE COMMUNIST KIA, BY INFLECTING FORCE 1965 - May 1966

Figure IV-9



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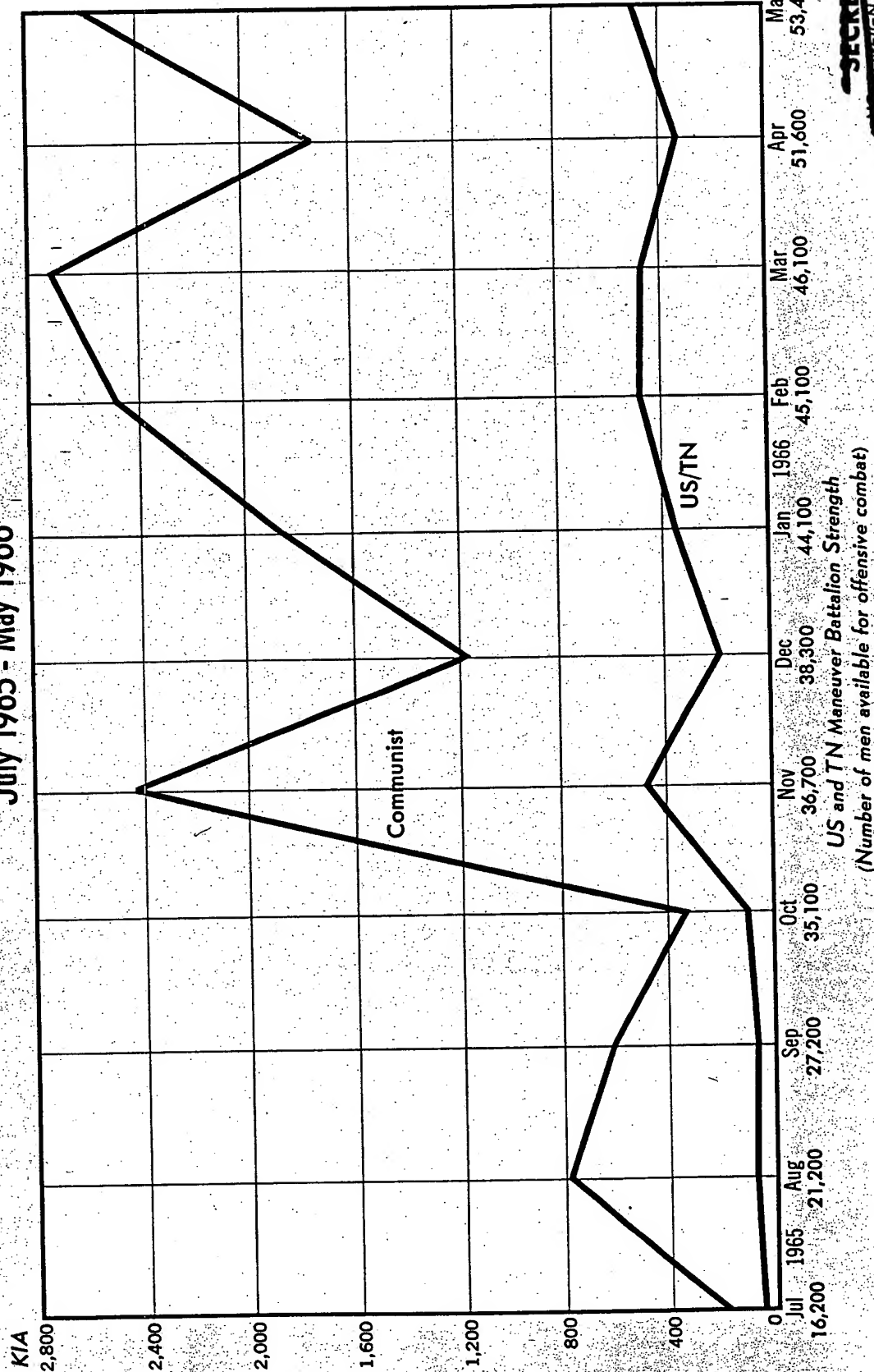
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Figure IV-10

RELATIONSHIP OF COMMUNIST AND US/THIRD NATION KIA
TO BUILD-UP OF US/THIRD NATION MANEUVER BATTALION STRENGTH

July 1965 - May 1966



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Figure IV-11

COMPOSITION OF REPORTED VC/NVA KIA BY INFLECTING FORCE

July 1965 - May 1966

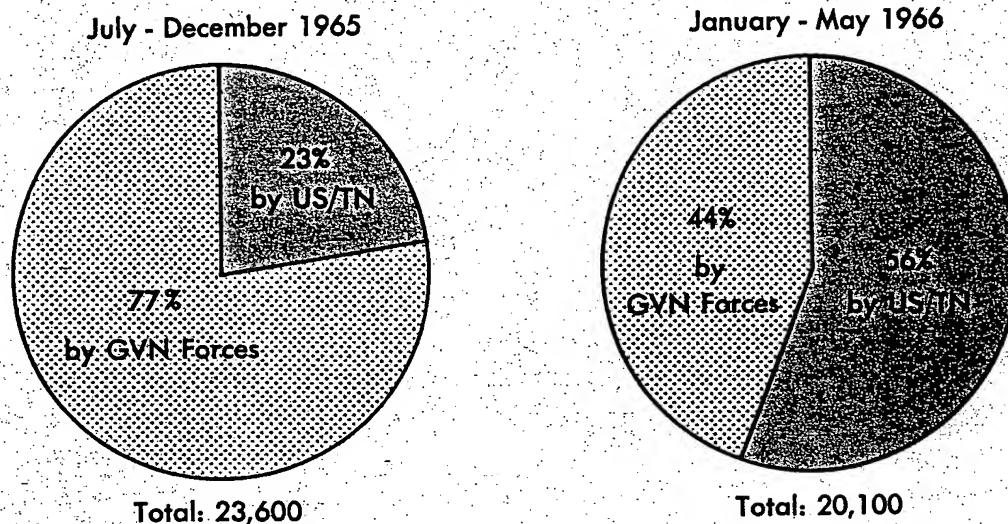
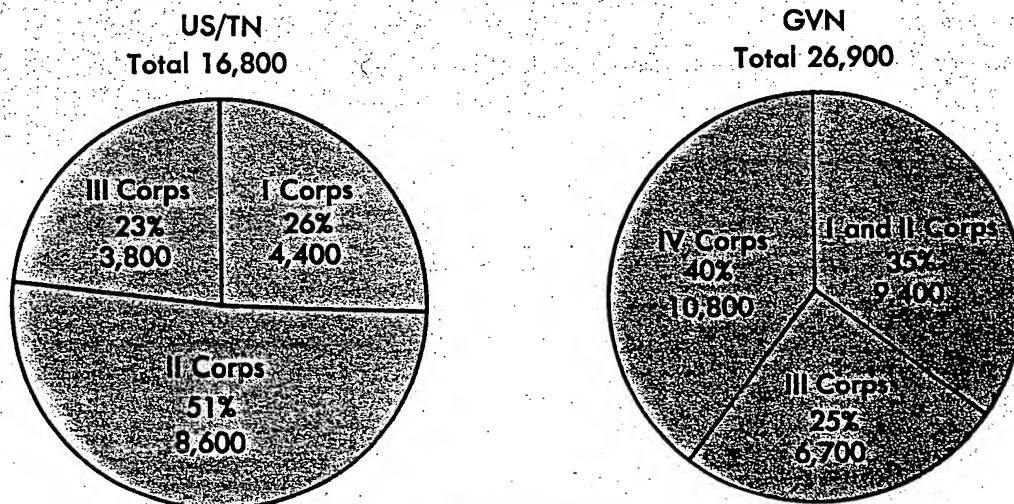


Figure IV-12

APPROXIMATE DISTRIBUTION OF REPORTED VC/NVA KIA, BY CORPS AREA

July 1965 - May 1966



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by them during the 11 month period, 26 percent were accounted for by US Marines in I Corps, 51 percent by US Army/Third Nation forces in III Corps. (See Figure IV-12). As a general rule US/Third Nation maneuver battalion kill ratios have been highest in I and II Corps areas and lowest in III Corps.

3. GVN

During the July 1965 - May 1966 period the South Vietnamese Army participation in ground operations decreased. From July-December 1965, GVN forces accounted for 7 percent of the 23,600 enemy troops reported killed in action, or approximately 3,000 enemy killed per month. (See Figure IV-13). High desertion rates, heavy casualties, and political instability have adversely affected the battlefield contributions of South Vietnamese military units.

South Vietnamese forces achieved a 2.7 to 1 kill ratio over Communist forces during the July 1965 - May 1966 period. Approximately 35 percent of these kills were recorded in I and II Corps, 25 percent in III Corps and 40 percent in IV Corps.

C. Communist Performance in Battle

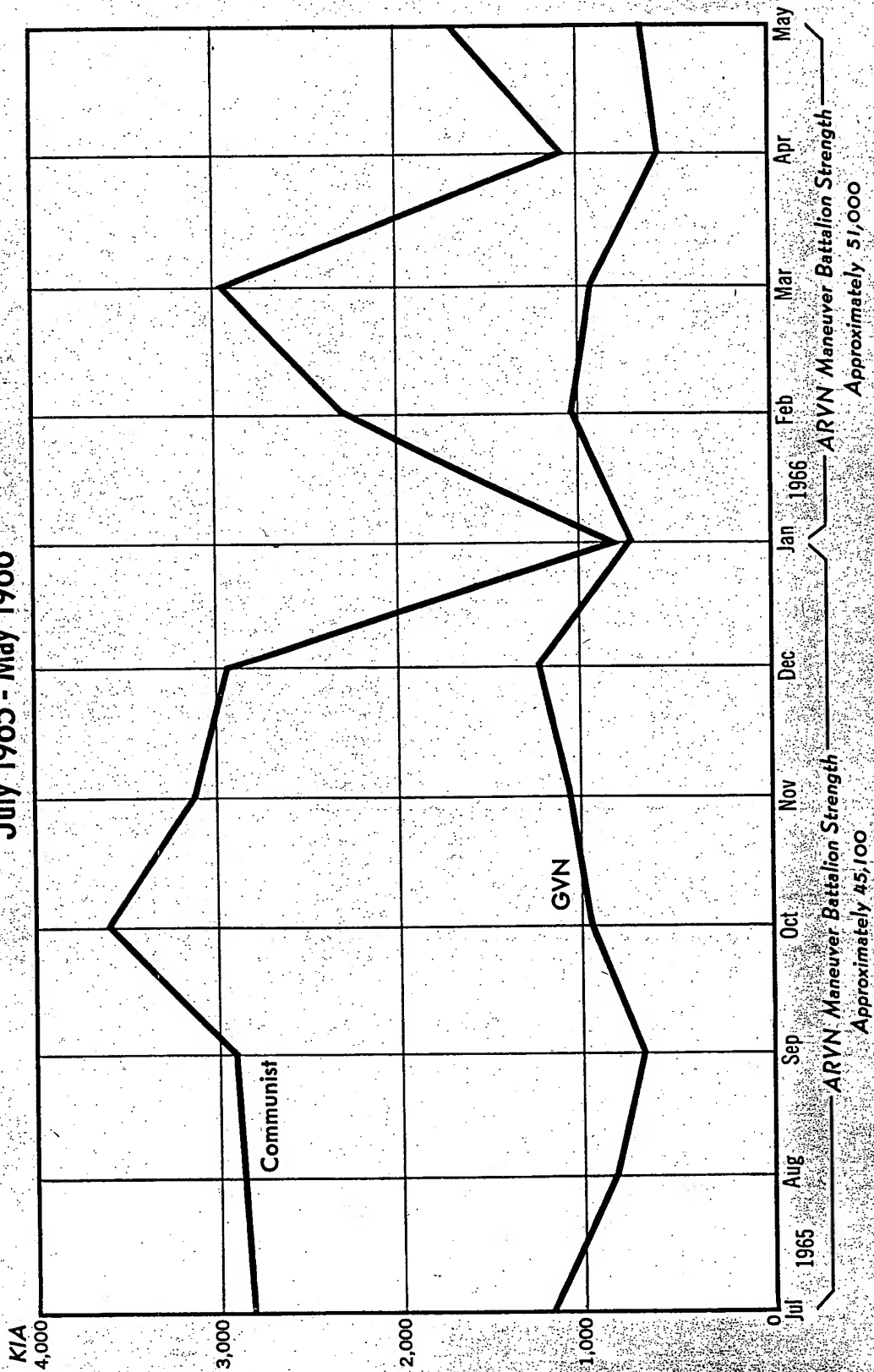
The question of Communist troop morale is discussed in detail in Annex VII. Communist troop performance indicates that the enemy troops are not yet experiencing morale problems that adversely affect their behavior on the battlefield. However, the number of captured Communist weapons, personnel, and desertions have increased considerably since 1964. (See Table IV-13). These losses can be explained by the increasing scale of combat and do not necessarily reflect a decline in Communist battlefield performance.

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RELATIONSHIP OF COMMUNIST AND GVN KIA TO BUILD-UP OF GVN MANEUVER BATTALIONS July 1965 - May 1966

Figure IV-13



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Table IV-13

South Vietnam: Absolute Indicators of Communist
Performance in Battle

	1964	1965	1966*
Communist "Chieu Hoi" Military Desertions**	1,900	9,500	12,000
Captured	4,200	6,300	7,000
Communist Weapons Captured	5,900	11,800	N. A.

*Estimate for entire year.

**GVN amnesty program for Communist deserters.

By relating the selected indicators to the scale of combat (the number of enemy reported KIA and captured) it is possible to illustrate that in a relative sense Communist forces are essentially performing as well as in battle today as they were in 1964 and 1965.

Table IV-14

Relative Indicators of Communist Motivations in Battle
Expressed in Terms of the Scale of Combat, 1964-66

	1964	1965	1966*
Captured - as a Percent of KIA	$\frac{.24}{1}$	$\frac{.19}{1}$	$\frac{.14}{1}$
Weapons Loss - as a Percent of KIA and Captured**	$\frac{.29}{1}$	$\frac{.30}{1}$	$\frac{.32}{1}$
"Chieu Hoi" Desertions - as a Percent of KIA	$\frac{.11}{1}$	$\frac{.27}{1}$	$\frac{.26}{1}$

*Ratios calculated on January-June data.

**Also includes weapons captured on junks and other infiltration craft, consequently this ratio overstates the true battlefield weapons loss.

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It is observed that Communist battlefield performance has not changed in spite of the growing scale of combat and increased US/Third Nation participation. At present, the magnitude of Communist morale problems in terms of influencing battlefield performance, seems to be a minor hindrance to enemy operations in South Vietnam.

D. An Approximate Allocation of NVA/VC Battle Fatalities January-May 1966

1. Methodology

One of the most difficult intelligence problems faced in South Vietnam is that of allocating enemy casualties to their respective fighting units. The characteristics of guerrilla warfare make it impossible to distinguish between civilians, irregulars, VC main force and PAVN troops killed in action. Lack of uniforms and unit insignias are some of the basic problems encountered. The time allotted to body identification of the battlefield is influenced by the pressures of combat and undoubtedly is far too short to allow for accurate body counts, let alone extensive investigations of enemy unit identification. The importance of allocating enemy casualties to their respective units is crucial in assessing the present and probable course of the war in South Vietnam. The extent to which the Communists must rely on internal recruitment and North Vietnamese regulars can best be determined by arriving at an approximate allocation of enemy casualties.

It was initially assumed that all enemy reported killed in action were members of the Communist military establishment. Such an assumption obviously overstates enemy losses since it includes civilians inadvertently killed in and around the battlefields and counted as enemy dead. The inclusion of considerable numbers of South Vietnamese Communist irregulars and combat support troops helps to relax this assumption to a certain degree. However, the lack of any definitive study on such civilian casualties makes it impossible to adjust enemy casualties with any degree of precision. Consequently the killed in action figures are taken as given.

In order to allocate enemy battlefield fatalities to NVA/VC units, it was assumed that enemy casualties

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were sustained in proportion to their respective troop strength in the various Corps areas as of mid-1966. In the case of irregular and combat support troops it was assumed that these forces were half as likely to engage in major combat operations as were the NVA and VC regular forces. Reported enemy battlefield fatalities were allocated on a corps basis during the January-May 1966 period. Enemy losses and respective strength by corps area were then compared. Since there were no known NVA troops stationed in IV Corps during January-May 1966 it was concluded that all of the reported battle fatalities were sustained by local Communists. NVA strength in III Corps during the relevant period accounted for a small portion of the enemy main force strength - 15 percent in III Corps by mid-1966. The preponderance of enemy casualties in III Corps during the relevant period were assumed, therefore, to be sustained by local Communists. The bulk of the NVA strength in South Vietnam is stationed in II and I Corps respectively. Communist losses during the January-May 1966 period in the two upper Corps were allocated to NVA/VC on the basis of regular enemy troop strength as of mid-1966. By employing this methodology it was deduced that at a maximum 25-30 percent of Communist battlefield fatalities were inflicted on NVA troops during January-May 1966. Projected enemy troop strengths indicate that about 40 percent of the enemy battlefield fatalities during the next year will be sustained by NVA forces.*

The use of Communist regular troop strength as of mid-1966 weights the casualties heavily toward NVA forces during the January-May 1966 period. NVA troop strength has rapidly increased in recent months, thus overstating probable NVA losses during the early months of 1966. Such a bias should counter arguments that NVA forces are employed more intensively in combat than are local Communist forces. The use of total South Vietnamese Communist

*It is not possible at this time to refine the allocation of fatalities by considering the actual frequency with which VC NVA units engage in combat.

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troop strength may also overstate local enemy casualties since it implicitly assumes that local forces have and will be engaged as often as North Vietnamese troops.

2. Analysis

This distribution provides some insights into probable future trends in the growth and composition of enemy forces in South Vietnam. It is estimated that Communist battlefield fatalities averaged approximately 4,000 a month during January-May 1966. Average monthly North Vietnamese and VC battlefield fatalities were 1,600 and 2,400 respectively. Accepted average monthly Communist infiltration during the same period was 4,200. Combined accepted and reported NVA infiltration averaged 7,000 a month.

It is obvious that during January-May 1966 North Vietnamese troop strength grew at a more rapid rate than did direct sustained battlefield fatalities. Considerable increases in estimated North Vietnamese Army strength in South Vietnam during the same period confirm this trend. The relatively stable size of the VC main force during the period probably indicates that the local Communists have been able to offset battlefield deaths by recruitments from the irregular forces and the populace.

IV. Communist Losses

A. Total Communist Losses

During 1965, it is estimated that some 79,300 to 90,300 Communists (See Table IV-15) were effectively put out of action. Projections indicate that from 105,000-120,000 enemy forces will be effectively lost in 1966 and from 65,000-75,000 will be lost during the first half of 1967. Battle fatalities account for approximately 40 percent of the losses, seriously wounded, estimated on the basis of captured documents, account for 32 percent, and captured and deserters the remaining 28 percent.

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Table IV-15
South Vietnam: Estimate of Communist Losses
1965 - June 1967

	1965	1966	Jan-June 1967
KIA	35,000	48,000	30,000
Captured	6,300	7,000	4,300
("Chieu Hoi" Returnees)	9,500	13,000	8,000
SUB TOTAL	50,800	68,000	42,300
Seriously Wounded	19,000-30,000	24,000-39,000	15,000-24,000
Deserters	9,500	13,000	8,000
TOTAL	79,300-90,300	105,000-120,000	65,300-74,300

1. Killed in Action

Average monthly reported Communist battle fatalities increased from less than 2,000 during the first 6 months of 1965 to approximately 3,900 each month in the second half of the year. During January-May 1966, Communist battle fatalities averaged 4,000 per month. Some 35,000 Communist troops were killed in action in 1965. Approximately 20,000 enemy troops were reported killed in action during January-May of this year, and current estimates indicate that approximately 48,000 Communists will probably be killed in action by the end of 1966.

2. Wounded in Action

a. Methodology

Few if any official figures are released that give an indication of the total number of Communist soldiers wounded in action. The primary reason for the lack of such information is that the enemy remove a considerable number of their dead and wounded from the battlefield in an effort to conceal their losses and prevent the capture of additional personnel.

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Three basic components went into derivation of an estimate of NVA/VC wounded in action. Consideration was given to historical factors such as: (1) US, ANZAC, and Japanese experience in Burma, Malaya, and the Pacific Islands in World War II; (2) the experience of South Vietnamese, and US/TN forces in Vietnam; and (3) Communist prisoner interrogation reports mentioning casualties and captured enemy documents such as medical reports and unit combat records. The observed ratios of wounded to killed during World War II and in Vietnam are summarized in Table IV-16 below.

Table IV-16

Selected Wounded to Killed Ratios

World War II	Wounded to Killed
Papuan Campaign (Australian)	$\frac{2.04}{1}$
Papuan Campaign (US)	$\frac{2.79}{1}$
Philippines (US)	$\frac{3.52}{1}$
Okinawa (US)	$\frac{4.31}{1}$
Burma 1949 (Japan)	$\frac{2.47}{1}$
Burma 1943 (Japan)	$\frac{3.23}{1}$
<u>Vietnam</u>	
South Vietnam, 1963-65, (GVN)	$\frac{2.17}{1}$
US/Third Nation, 1965	$\frac{4.1}{1}$

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Prisoner interrogation reports and captured enemy documents provided 15 quantifiable observations on the relationship between Communist troops killed and wounded in action. Enemy casualties ranged from some 700 in large unit actions to 20 casualties or less in small group actions. All of these losses were sustained while fighting against South Vietnamese forces during 1964 and 1965. The observed ratios of wounded to killed in action ranged from 1.07:1 to 2.4:1, with a weighted average ratio of 1.62:1. Since these figures are not biased by enemy removal of dead troops from the battlefield they may better reflect the distribution of enemy killed to wounded than those ratios which employ Allied body counts as a base figure.

An enemy document captured by the 1st Cavalry Division on 17 March 1966, in central Binh Dinh Province, revealed regimental data on Communist troops wounded in action during 9 April 1965 - 1 March 1966. The 2nd VC, 18th NVA, and Quyet Ram regiments which were estimated to be the major enemy elements stationed in Binh Dinh were listed in the document. The security of Binh Dinh is predominantly maintained by US and ROK forces. Consequently, a comparison between Communist troops killed in action (US/ROK body count) and enemy accounts of those wounded in action in Binh Dinh during the relevant period provides some indication of an enemy (WIA) relationship between US/Third (KIA) nation forces and the enemy.

US/ROK forces killed 628 Communists in Binh Dinh during the relevant period according to body counts. Enemy documents indicate that 1,135 troops were wounded. Some 85 Communists wounded in action were captured by US/ROK forces. It is assumed that: (1) US/ROK forces did most of the fighting in Binh Dinh Province; and (2) that the above mentioned Communist regiments comprise most of the enemy strength in Binh Dinh. The resulting ratio is
$$\text{WIA} = \frac{1,135 + 85}{628} = 1.94$$
 for Communist forces engaging US/Third Nation forces in South Vietnam. The US/ROK body count probably understates the number of enemy killed and consequently results in higher wounded to killed ratio than was probably experienced.

A general relationship between the number of troops killed in action and those wounded in action was

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observed in the samples examined. Troops with high kill ratios (Enemy killed) also experienced high wounded to (Friendly killed) killed ratios (Friendly wounded). Conversely, troops with (Friendly killed) relatively low kill ratios tended to have low wounded to killed ratios. Troops (such as NVA/VC) with low kill ratios probably sustain a large number killed and a relatively smaller number wounded, while troops (such as US/Third Nation forces) with high kill ratios sustain a smaller number killed and a relatively larger number wounded. This relationship can be rationalized by the fact that better trained and organized troops with superior support fire from artillery and aircraft sustain fewer fatalities in obtaining or defending an objective than do forces that lack such support fire.

Captured enemy documents further indicate that approximately 50 percent of the wounded received serious injuries--broken bones and damage to internal organs that required immediate surgery. About 30 percent of the wounds were classified as light, and most of these cases were immediately returned to the battlefield. The remaining 20 percent suffered slight wounds that required little medical attention and were also immediately returned to the field.

It is difficult to estimate the number of seriously wounded Communist troops who die or cease to be effective fighting men. However, most of the seriously wounded are moved considerable distances by primitive means of transportation to surgical centers where, undoubtedly, the facilities and the quality of the medical personnel are far below Western standards. These factors coupled with the consideration that many Communist troops are already affected by debilitating tropical diseases suggest that the majority of the seriously wounded troops are out of action for considerable lengths of time or indefinitely.

b. Estimate

Some 19,000 to 30,000 Communist troops were seriously wounded in 1965. End of year estimates indicate that from 24,000-39,000 enemy troops will be seriously wounded in 1966.

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3. Captured

Some 6,300 Communist military personnel were captured in action during 1965. Given the current scale of operations it is estimated that approximately 7,000 enemy troops will be captured in 1966.

4. "Chieu Hoi" Returnees and Deserters

Some 9,500 Communist soldiers defected under the GVN "Chieu Hoi" program during 1965. Current estimates indicate that about 13,000 enemy military personnel are expected to defect under the "Chieu Hoi" program this year. No information exists on the number of enemy personnel who simply desert and return to their villages. We estimate that unrecorded enemy desertions are at least equal to the number of defectors under the "Chieu Hoi" program. This is admittedly a conservative approach and the actual numbers of deserters could be significantly higher than the estimates used in this annex.

B. Allocations of Present and Future Communist Military Losses in South Vietnam

It is estimated that a maximum of some 25,000 to 30,000 North Vietnamese troops will be effectively put out of action in South Vietnam during 1966. An additional 25,000 to 30,000 will be lost in the first half of 1967 if current rates of combat are maintained and projected troop strengths are realized. The bulk of the North Vietnamese losses will result from troops killed and seriously wounded in action. Relatively few North Vietnamese losses will be accounted for by captures, desertions, or defections.

Local Communists (including main forces, irregulars and combat support troops) will at a maximum sustain some 80,000 to 90,000 effective losses in action during 1966. An additional 40,000 to 45,000 will be lost in the first half of 1967. Approximately two-thirds of the local Communist losses will result from battle deaths and serious wounds. The remainder will be accounted for by captures and desertions. The relative shift in casualties from local to North Vietnamese Communist forces in 1967 reflects the expected increase in the role of PAVN troops in the South Vietnamese war. In terms of comparative battlefield losses the Allied

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forces have a distinct advantage over the Communists. It is estimated that some 16,000 Free World soldiers will be killed in action during 1966, (6,000 US/TN, 10,000 GVN), compared to 48,000 Communists. An additional 9,000 Allied soldiers will probably be killed by mid-1967, reflecting the same loss composition, compared to some 30,000 Communists.

In a country with an abundant population, where some 270,000 natural deaths and 20,000 accidents occur each year, the loss of some 40,000-60,000 youths annually for the sake of "National Liberation" does not, in an oriental sense, seem too high. The increased North Vietnamese commitment in South Vietnam is not, however, entirely based on patriotism. VC units have borne the brunt of enemy casualties to date and appear pressed to maintain their current strength in face of growing Allied strength. The squeeze on VC manpower is becoming more apparent, and the necessity of outside help more acute if the war is to be waged at the present level. North Vietnam appears both willing and able to take on this task in the hope that a protracted struggle will give them ultimate victory. It may, however, find this commitment to be increasingly burdensome particularly as it required increasing numbers of the country's limited resources of skilled manpower and leadership cadres.

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